

Fiber Optic GIG-E, Video/Audio, HDTV Transceiver Model MX1250V



Description

The MX1250V multiplexes a Gigabit Ethernet transceiver with a Video / Audio Multiplexer. The Video/Audio multiplexer may be configured for one baseband video and 4 channels of audio, two baseband videos and 4 channels of audio or one baseband video, 4 audio channels and one HDTV channel.

The MX1250V can be configured to transmit over one or two fiber strands.

The MX1250V has easy-to-read diagnostic LED's for continuous status reports on network speed, duplex media access control connection, and network traffic.

The MX1250V uses standard SC or SC/APC fiber optic connectors and is IEEE 802.3z 1000BASE-FX compliant and operates with all devices that adhere to this standard.

Features

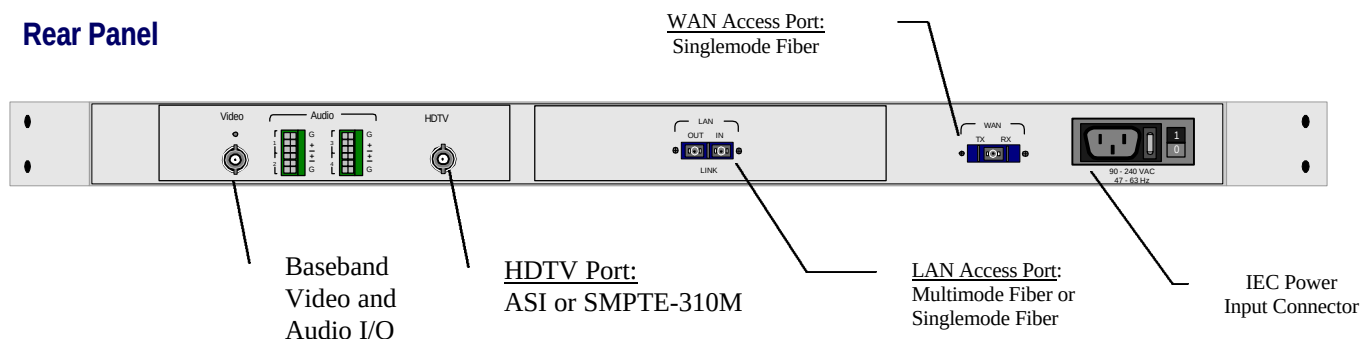
- 1000Mbps Full Duplex Gigabit Ethernet Transceiver
- One 1000BaseFX LAN Fiber Port (multimode or singlemode optics).
- One 1000BaseFX WAN Fiber Port (singlemode optics 1310, 1550, CWDM, DWDM)
- One Video Multiplexer Port configured for baseband video, baseband audio or HDTV channels
- 90 Km Transmission Range
- 1 or 2 Fiber Strand Transmission
- Provide full wire-rate 2000Mbps Duplex Transmission for greater network performance
- Plug-n-Play Gigabit Ethernet Mode Converter or Singlemode Repeater, IEEE 802.3z Compliant

Model Selection Guide

Model	Description
<i>MX1250V-1S1V4AH-SCA-25</i>	1000Base F.O. Gigabit Ethernet Transceiver, 1 Video, 4 Audio, 1 HDTV, 1 Fiber, SC/APC Connector, 25 Km
<i>MX1250V-1S1V4AH-SCA-70</i>	1000Base F.O. Gigabit Ethernet Transceiver, 1 Video, 4 Audio, 1 HDTV, 1 Fiber, SC/APC Connector, 70 Km
<i>MX1250V-2S-1V4AH-SCA-60</i>	1000Base F.O. Gigabit Ethernet Transceiver, 1 Video, 4 Audio, 1 HDTV, 2 Fiber, SC/APC Connector, 60 Km
<i>MX1250V-2S-1V4AH-SCA-90</i>	1000Base F.O. Gigabit Ethernet Transceiver, 1 Video, 4 Audio, 1 HDTV, 2 Fiber, SC/APC Connector, 90 Km

Other Connectors and Distances Available Upon Request

Rear Panel



Standards	IEEE 802.3z 1000BASE-FX Gigabit Ethernet Video: NTSC, PAL, SECAM
Connection Ports	2 Port Port Fiber Transceiver: SC/PC or SC/APC Video: BNC, 75Ohm, Audio: Terminal Block, HDTV: BNC
Video Specifications	SNR > 67 dB, dP < 1 degree, dG < 1%
Network Media	62.5/125 microns multi-mode Fiber cable 9/125 micron singlemode fiber cable.
LED indicators	Power, Link
Physical Dimensions	17" x 10" x 1.75"
Environment	Temperature: Operating: 0C to 50C Storage: -20C to 70C Humidity: Operating: 10% to 90% RH Storage: 5% to 90% RH
Input Power Requirements:	Voltage: 110/220V Auto-sense Internal Power, USA

Package Includes

- Two Port 1000Base Gigabit Ethernet Transceiver and Video/Audio/HDTV Multiplexer (Various Configurations)
- Power Cord
- Rack-mountable hardware
- Easy to follow owner's manual

System Requirements

- IEEE 802.3z 1000BaseFX Gigabit Ethernet

Warranty

- 5 year limited warranty

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User's Manual



MX1250V



Gigabit Ethernet & Audio Video Fiber Optic Transceiver

Installation and User Guide

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1 SAFETY INSTRUCTIONS

THE 1250v SYSTEM MAY CONTAIN A CLASS IIIb LASER. PLEASE OBSERVE THE FOLLOWING SAFETY PRECAUTIONS THAT APPLY TO LASER EQUIPPED UNITS.

WARNING: Do not disconnect the fiber optic external connector with the power turned on. Exposure to Class IIIb Laser radiation is possible when the external fiber connector is disconnected while the unit is still powered up. Ensure the rubber boot is in place whenever the fiber optic cable is disconnected.

CAUTION: Attempting to make adjustments or performing operations other than those specified may result in hazardous radiation exposure. Exposure for only seconds can cause permanent eye damage as well as other injuries.

2 INTRODUCTION

2.1 Module Description

The 1250v Series is a 1000BaseTX to 1000BaseFX converter. The 1250v Series modules can be configured for multimode, singlemode, WDM or CWMD applications

Depending on the distance requirements between sites, the 1250vs may be equipped to operate over multimode or single mode fiber. Distances between the transmitter and receiver can be up to 3 Km for multimode operation and up to 120 Km for single mode operation.

Models Numbers:**1250V-FF-(RJ45)-NV-MA-CCC-DDD-YYYY****1250V:** 1000Base-FX / Video & Audio Media Converter Module.**FF WAN Port Fiber Count / Fiber Type**

1S	1 Singlemode Fiber
2S	2 Singlemode Fibers
2M	2 Multimode Fibers

RJ45 1000BaseTX to Fiber Media Converter (Option)**NV** Video Channels**MA** Audio Channels**CCC WAN Port Fiber Optic Connector Type**

SC	SC/PC (Blue)
SCA	SC/APC (Green)
FC	FC/PC
FCA	FC/APC
ST	ST

DDD WAN Port Distance in Kilometers**YYYY WAN Port Fiber Optic Wavelength,**

850	850nm, Multimode
1310	1310nm Singlemode
1550	1550nm Singlemode
1470 – 1610nm	CWDM Wavelength or DWDM Wavelength

2.2 Gigabit Ethernet Module Front Panel Indicators

The following diagram depicts the front panel indicators:

Link Indicator:

LNKF – Optical Fiber Link OK

LNKC – 1000BaseT (RJ45) Link OK



Link Indicator:

TX Data Transmitted

RX Data Received

FDX/COL Full Duplex / Collision

LAN Port

1000Base-T I/O (RJ45)

Removable Modules:



Video Module Front Panel Indicators



Module Power Status

LED GREEN = OK

LED OFF = No Power

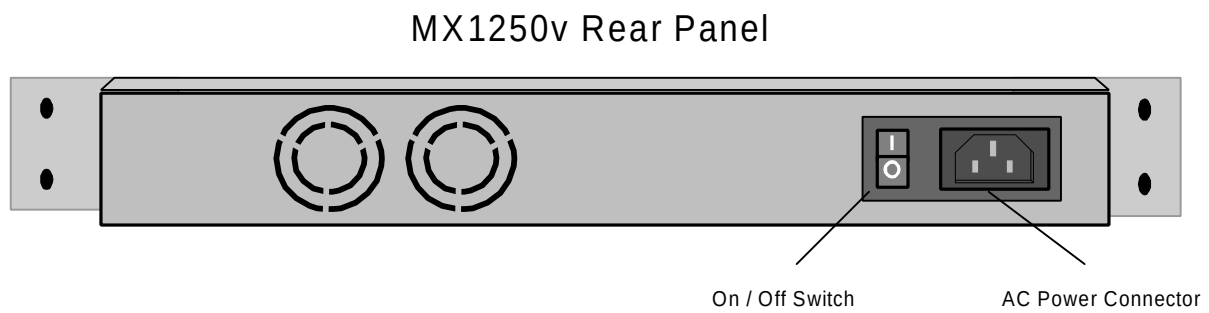
Fiber Optic Link Status (Light on)

TX – Transmitter Status: OK

RX – Optical Link OK

2.3 Rear Panel Features

The following diagram depicts the rear panel features:



3 INSTALLATION

3.1 General Installation

We strongly suggest that you install the chassis first, as this is more convenient for you to install media converters into the chassis with ease. The accessories supplied in the product package includes: rackmount screws, rackmount brackets, and bracket screws.

This well-built chassis can be installed in the following ways:

Mounted to 19-inch standard rack

Use the rackmount brackets and screws to install the chassis into any EIA 19" standard rack.

Step 1: Attach the brackets to each side of the chassis. Apply screws to each side and secure them tightly.

Step 2: Carefully position the chassis into the rack. Align the brackets to the side holes on the rack and use rack screws to secure the chassis with the rack.

Step 3: Proceed to the "Connecting to Power" section.

Desktop or any flat surface

The chassis can sit on desktop or any flat surface with adequate space and ventilation. If you want to place it onto a shelf, make sure the shelf can withstand a minimum weight of 10kg.

Step 1: Simply put the chassis on the desired place.

Step 2: Ensure the chassis receives good ventilation.

Step 3: Proceed to the "Connecting to Power" section.

3.2 Connecting to power

Step 1: Connect the supplied AC power cord to the receptacle on the power supply.

Step 2: Attach the plug into a standard AC outlet with a voltage range from 100~240Vac.

Step 3: Turn on the chassis system by flipping the ON/OFF switch beside the receptacle to ON position. The LEDs on the front panel of the media converter chassis system will come on then.

3.3 Fiber optic cable connection

Verify that the fiber cable meets the VX12T/R Series' transmission requirements. Relevant cable specifications include loss, distance (dispersion) and return loss.

3.4 Module Removal and Insertion

The VX12T/R modules may be removed and inserted for module upgrade or maintenance.

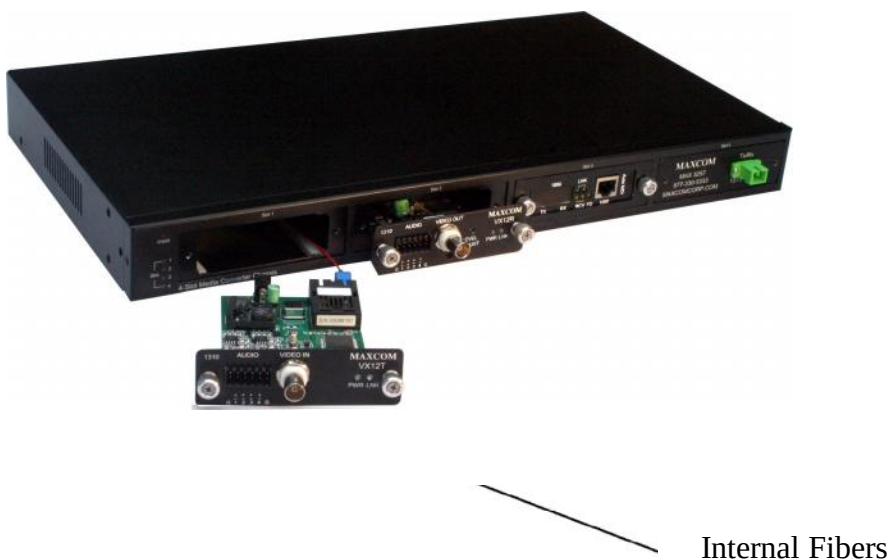
Module are removed by simply unfastening the thumb screws, slipping the module out of the slot about 2 inches past the slot and remove the internal fiber connection. Use common sense and care when removing and inserting modules.

To Insert a module, orient the module close to the slot, connect the fiber connector to the optical module, slide the card into the slot and fasten the thumb screws.

For TX units, connect the internal fiber to the optical module port labeled TX. For RX units, connect the internal fiber to the port indicated by the ARROW on the optical module.

WARNING: Failing to properly remove the internal fiber connection may break the fiber and render the slot unusable.

The picture below shows the module removed from the chassis:

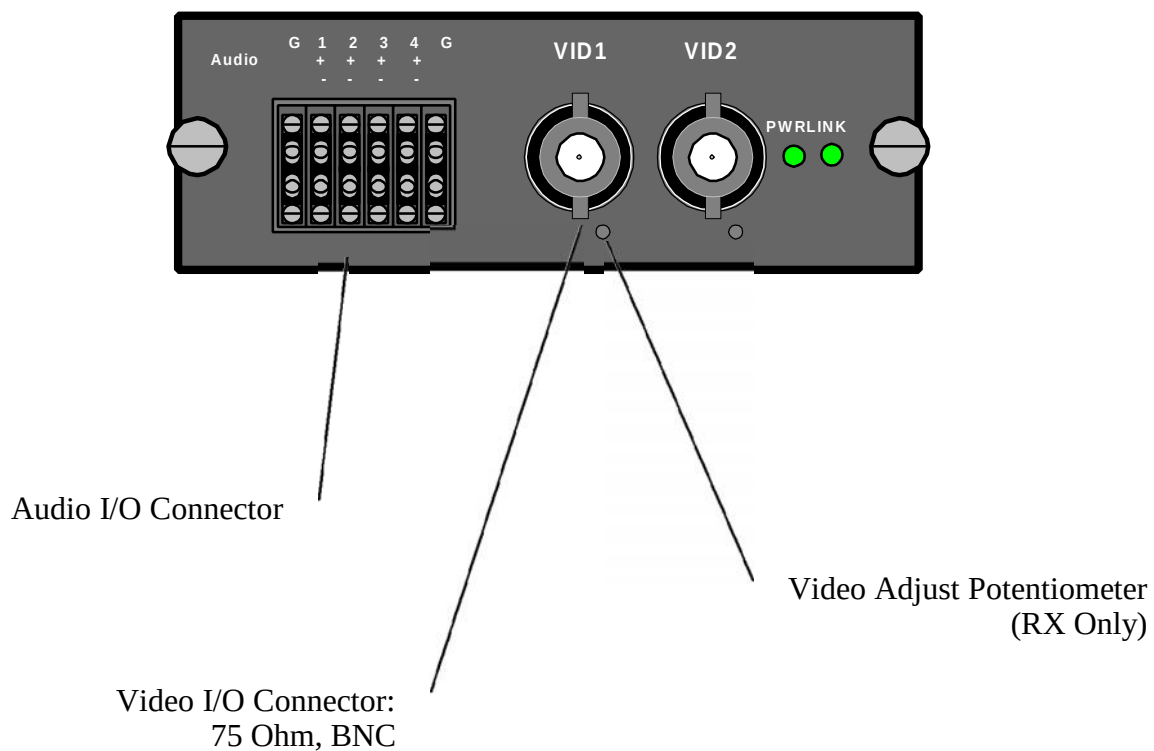


Internal Fibers

3.5 VX12 / VX24 Module Video Connections

Video signals are sent over a **75 ohm coax cable terminated in a BNC connector** (e.g. RG 59U with a BNC connector)

- a. At the TX end (VX12T), connect the video source to the VIDEO BNC connector.
- b. At the RX end (VX12R), connect the VIDEO BNC to monitor. The output video level may be adjusted by using a small screwdriver to turn the screw above the output video connector, as shown below:



3.6 Audio Connection

The VX12T/R Models have either simplex or duplex audio. The VX12T/R supports both balanced audio and unbalanced audio. Accessing the audio I/O requires connecting to one or both channels of audio. The audio input and output impedance is 10Kohms.

The Audio Terminal Block on the Video/Audio module provides the connectivity for transmitting and receiving audio. The illustrations below show how to connect balanced and unbalanced audio:

VX12T/R Audio Terminal Block Plug mates with the VX12T/R's Audio Jack:

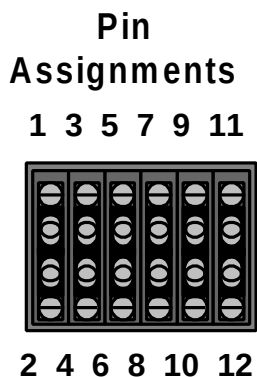


Inserting wires into the VX12T/R Audio Terminal Block:



Tension clamp connection;
Accepts wires up to 16 AWG / 1mm²

Terminal Block Pin Out:



3.7 Balanced Audio (Differential)

For Balanced audio connections, connect the audio “+” lead to the respective audio channel “+” input and the “-” lead to the audio channel “-” lead, as shown below.



Balanced Audio Input & Output Connections

Audio Channel 1 (+) Lead

Connect Ground to TB Pin 1
Connect Input + to TB Pin 3
Connect Input - to TB Pin 4

Audio Channel 2

Connect Input + to TB Pin 5
Connect Input - to TB Pin 6
Connect Ground to TB Pin 2

Audio Channel 3

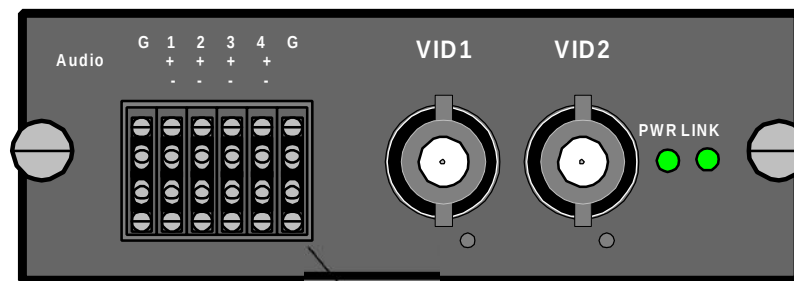
Connect Input + to TB Pin 7
Connect Input - to TB Pin 8
Connect Ground to TB Pin 11

Audio Channel 2

Connect Input + to TB Pin 9
Connect Input - to TB Pin 10
Connect Ground to TB Pin 12

3.8 Unbalanced Audio (Single Ended)

For Unbalanced audio connections, connect the audio I/O to the respective “+” and “GND” leads on the output audio connector, as shown below.



Unbalanced Audio Input & Output Connections

Audio Channel 1 (+) Lead

Connect Ground to TB Pin 1
Connect Input + to TB Pin 3

Audio Channel 2

Connect Input + to TB Pin 5
Connect Ground to TB Pin 2

Audio Channel 3

Connect Input + to TB Pin 7
Connect Ground to TB Pin 11

Audio Channel 4

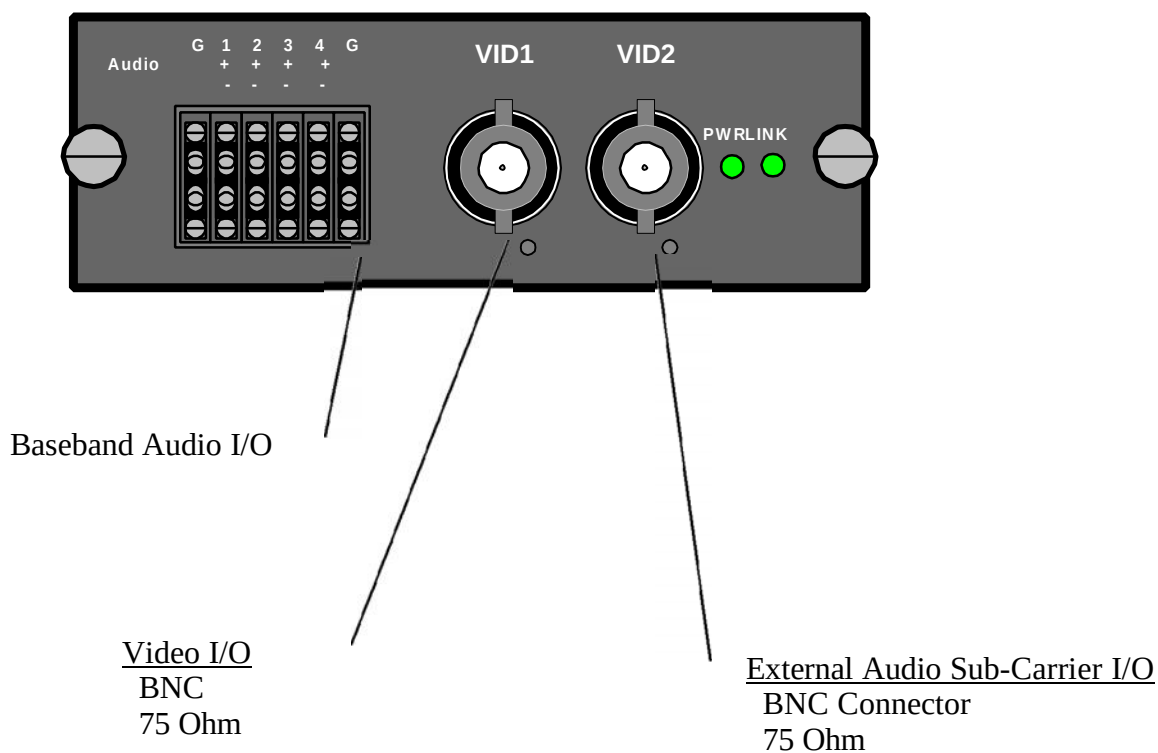
Connect Input + to TB Pin 9
Connect Ground to TB Pin 12

Note: Unbalanced Audio output will be 3dB less than input

Note: DO NOT connect the (-) lead to ground on the audio OUTPUT as this may create noise on the ground, which may distort the video signals.

3.9 External 4.5Mhz Audio Sub-Carrier

The VX12T/R Series also includes an option for transmitting video, audio and a 4.5Mhz audio sub-carrier as an external signal. The figure below depicts the VX12T/R set up with video, 4 channels of baseband audio and an external audio sub-carrier channel. The audio sub-carrier channel uses a BNC connector with 75 ohm impedance.



4 Operation

Turn-On Procedure

To operate the 1250V Gigabit Ethernet Modules system:

1. Install the MX5000GE module, if necessary
2. Connect the 1000Base-TX Gigabit Ethernet to the Module
3. Install the fiber optic cables to the 1250v
4. Verify that the PWR and LNKF and LKNC are illuminated. This indicates that the unit has a good optical and 1000BaseT link.
5. Verify that the VX12T Video Module Power and LINK status = GREEN
6. Verify that the VX12R Video Module Power and LINK status = GREEN
7. Connect VIDEO INPUT(s) to VX12T BNC IN Connectors
8. Connect AUDIO INPUTs to the VX12T Terminal Block
9. Verify that Video and Audio are being received at the VX12R